

In re Patent Application of:
MARK WELLS
Serial No. 10/542,889
Filing Date: 11/18/2005

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Remarks

Applicant and the undersigned would like to thank the Examiner for the effort and guidance provided in the examination of this application. Claims 1-11 and 13-34 remain in the case. Claim 12 is cancelled by this amendment. New Claims 35 and 36 are added.

Drawings have been objected to under 37 CFR 1.83(a). New drawing of Figure 3a is added by this amendment illustrating elements originally disclosed in Paragraph 38 of the Specification. No new matter is added by this amendment.

Claims 32 was rejected under 35 USC 112, first paragraph and is amended to overcome the rejection. Claim 19 was rejected under 35 USC 112, second paragraph and is amended to more clearly describe the invention. Respectfully, Claim 19 defines that the pin is secured in the sleeve. Figure 3 shows a sleeve 28 within which pin 24 is secured and by which the pin 24 is surrounded (Claim 18). Socket 22 is moveable relative to the pin 24 and the sleeve 28. We submit that the wording of Claim 19 is clear. Further, we have amended Claim 32 and submit that this claim is now clear.

Claims 1, 4-6, 8-111, 16-19, 20, 25 and 33-34 were rejected under 35USC 102(b) as being anticipated by US Patent No. 5,601,443 to Stinsky. Claims 1, 7, 21-24 and 26-29 were rejected under 35USC 102(b) as being anticipated by US Patent No. 2, 269,314 to MacDonald. Claims 1, 14, 21-24, 26-29 and 32-34 were rejected under 35USC 102(b) as being anticipated by US Patent No. 1,956,037 to MacDonald.

Claims 2, 3, 12, 1 and 15 were rejected under 35 USC 103(a) as being unpatentable over Stinsky '443. Claims 30 AND 31 were rejected under 35 USC 103(a) as being unpatentable over MacDonald '037.

MacDonald '037 describes and shows in Figure 4 a connection device having wedge portions 22, socket 28 and pin 21. The pin 21 has a conical shape and is arranged so that the wedge portions 22 forces finger portions of the socket 28 inwardly. MacDonald does not disclose nor suggest the wedge portion comprising a flexible material as called for in amended independent Claims 1, 33 and 34.

The Examiner states that none of the cited prior art documents discloses a flexible wedge portion, but argues that it would be obvious to a skilled person to select a flexible material. As is well known to those of skill in the art, the electrical connection device according to the present invention has particularly advantageous application for high power and high voltage electrical connections, such as those used in the mining industry. For such applications it is important to avoid air gaps between surfaces of the pin and the socket as such air gaps can result in a corona effect, which is dangerous and also has a serious impact on device performance and lifetime. Embodiments of the present invention are arranged so that the pin and socket are connected without formation of any air gaps. For example, the socket 22 is moved towards the pin 24 until the wedge portion 25 imparts sufficient force so that ends of the fingers of the socket 22 are in contact with the pin 22 without inclusion of air. Typically, the electrical connected device 20 comprises a large vice-like arrangements to move the socket and the pin relative to each other and thereby impart the required large forces. If the wedge portion 25 would not comprise a flexible material, the pin, the socket and the wedge portion would seize together and it would be very difficult to disengage the pin and the socket. Consequently, the flexible wedge portion results in a significant advantage for the electrical connection device according to the present invention as such seizing can be avoided.

In contrast, the prior art, such as MacDonald '037, only discloses metallic wedge

portions. For electrical connection devices such as that disclosed in MacDonald '037, metallic wedge portions are sufficient as this prior art citation discloses a low voltage arrangement. Relatively low forces are required to move the socket and the pin to the engaged position and seizing can be avoided. Figure 4 of MacDonald '037 also shows an air gap between ends of the fingers 28 and the pin. Such a pin and socket arrangement would be unsuitable for high voltage applications. For such a device a flexible wedge portion would add no advantage. In fact it would unnecessarily increase the production cost. Further, Stinsky '443) discloses an auto-seizing connector and consequently teaches in the opposite direction, as the flexible wedge portion of the present invention seeks to avoid seizing.

We respectfully submit that a skilled person, in light of his stock knowledge and in light of known electrical connection devices would not consider a flexible wedge portion. Consequently, it is submitted that independent Claims 1, 33 and 34 and the associated claims dependent thereon are novel and non obvious to one of skill in the art in light of the cited prior art. Corresponding amendments made to independent Claims 33 and 34 and we submit that all claims of the present application are novel and inventive in light of the prior art.

Further we have introduced a new Claim 35 and 36, which introduce a curved surface. We submit that this feature is in substance disclosed in the specification as filed, see for example Figures 3 and 3a.

Applicant respectfully submits that the above amendments place this application in a condition for allowance, and passage to issue is respectfully solicited. The Applicant and the undersigned would like to again thank the Examiner for the examination and guidance provided in the examination of this application. If the further

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prosecution of the application can be facilitated through telephone interview between the Examiner and the undersigned, the Examiner is requested to telephone the undersigned at the Examiner's convenience.

Respectfully submitted,


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